

CONTROLLED HIGH EFFICIENCY LESION FORMATION USING HIGH INTENSITY ULTRASOUND

Abstract of the Disclosure

5 An ultrasound system used for both imaging and delivery high intensity
ultrasound energy therapy to treatment sites and a method for treating tumors and
other undesired tissue within a patient's body with an ultrasound device. The
ultrasound device has an ultrasound transducer array disposed on a distal end of
an elongate, relatively thin shaft. In one form of the invention, the transducer
array is disposed within a liquid-filled elastomeric material that more effectively
10 couples ultrasound energy into the tumor, that is directly contacted with the
device. Using the device in a continuous wave mode, a necrotic zone of tissue
having a desired size and shape (e.g., a necrotic volume selected to interrupt a
blood supply to a tumor) can be created by controlling at least one of the
f-number, duration, intensity, and direction of the ultrasound energy administered.
15 This method speeds the therapy and avoids continuously pausing to enable
intervening normal tissue to cool.